

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 9, 31-32, and 53-54 have been canceled. Claims 1-8, 10, 12-30, 33-37, 42-52, and 55-70 are pending, of which claims 1, 8, 12, 28, 33, and 49 have been amended.

35 U.S.C. §102 Claim Rejections

Claims 1-10, 12-37, and 42-70 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. US 2002/0152102, to Brodersen et al. (hereinafter, "Brodersen") (*Office Action* p.2). Applicant respectfully traverses the rejection.

Brodersen describes state model development of industrial and business processes and relates to business objects which model steps or states in a business process or in a manufacturing process (§0001 and §0008). A "state model is created by selecting a template for the state model, and selecting industrial or business object components for the state model" (*Abstract*).

To the contrary, Applicant claims and describes a finite state model-based testing system that enables a user to define and generate a model for testing a software application (*Summary*, p.9, lines 2-3 and claim 1, for example). A user interface enables a user to define a state table and associated software application transitions from which a model generation engine generates an entire model (i.e., state table) of the software application under test (*Summary* p.9, lines 8-11). A test sequence of inputs for the software application is generated from the model of

1 the software application, and the software application is tested with the test
2 sequence of inputs (*see* claim 1 for example).

3
4 Claim 1 recites a finite state model-based testing system comprising:

5 a model generation engine configured to generate a model of a software
6 application, the model being generated from parameters that describe the software
7 application;

8 a user interface to enable user entry of the parameters to define the model;

9 a graph traversal program to generate a test sequence of inputs for the
10 software application, the test sequence of inputs being generated from the model
11 of the software application; and

12 a test driver to initiate a test of the software application with the test
13 sequence of inputs.

14 Brodersen does not show or disclose that a model of a software application
15 can be generated from parameters that describe the software application, or “a
16 graph traversal program to generate a test sequence of inputs for the software
17 application, the test sequence of inputs being generated from the model of the
18 software application”, as recited in claim 1.

19 Brodersen only describes state model development for industrial and
20 business processes (*Abstract*). Further, there is no indication in Brodersen of even
21 testing a state model that is developed to define an industrial or business process.
22 Brodersen simply utilizes objects that include supplied functions, variables, and
23 routines for incorporation into a program for a business or industrial process
24 (§0004 and §0028). Presumably, these supplied program components have
25 already been tested for use in Brodersen.

1 The Office relies on the title and abstract of Brodersen to reject the
2 “model-based testing system comprising a model generation engine”, as recited in
3 claim 1 (*Office Action* pp.2-3). However, the Office disregards that claim 1 also
4 recites the model generation engine “to generate a model of a software
5 application”. Brodersen does not disclose to generate a model of a software
6 application, as recited in claim 1.

7 The Office further states that a Brodersen model comprises rules and
8 conditions that inherently imply testing, and the Office relies on Brodersen ¶0010
9 “which indicates that prerequisites must be met (via testing)” (*Office Action* p.2).
10 Applicant disagrees with this mischaracterization of Brodersen because ¶0010
11 says nothing about testing – the Office is relying on Applicant’s disclosure to
12 modify Brodersen in an effort to reject the present application. Further, the rules
13 and conditions do not inherently imply testing, as the Office claims, because
14 Brodersen describes at ¶0027 that a state model has permitted states and permitted
15 transitions, which may inherently imply that there is no testing.

16 The Office also relies on Brodersen ¶0013 which “introduces testing and
17 quality control steps” (*Office Action* p.2). Applicant disagrees that this testing
18 referred to in Brodersen ¶0013 is applicable to a test of the software application
19 recited in claim 1. Brodersen describes in ¶0013 that, for industrial models,
20 testing and/or quality control steps may be introduced for manufactured
21 equipment. There is no indication in Brodersen of a model of a software
22 application, or even of testing the software application with a test sequence of
23 inputs generated from the model of the software application, as recited in claim 1.
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1 Brodersen also does not show or disclose “a graphical user interface to
2 enable user entry of parameters for defining the model”, as recited in claim 1.
3 Brodersen illustrates a user interface that is a state model view of a business
4 process (Fig. 3; ¶0049). Brodersen says nothing about a graphical user interface to
5 define a model of a software application to be tested, as recited in claim 1.

6 The Office relies on Brodersen at ¶0003 which indicates that users develop
7 or define the model (*Office Action* pp.2-3). The “model” referred to as being
8 developed in Brodersen is a business process. There is nothing in Brodersen to
9 indicate that a user interface enables entry of parameters to define the model of the
10 software application, as recited in claim 1. Brodersen does describe at ¶0003 that
11 there is a need for development tools to allow end users to develop business
12 applications customized to their needs and derived from supplied base classes,
13 functions, subroutines, and the like. As described above, Brodersen simply
14 utilizes program components that have already been developed and supplied.

15 Brodersen also does not show or disclose a test driver to initiate a test of the
16 software application with the test sequence of inputs, as recited in claim 1. The
17 Office relies on Brodersen at ¶¶0053-54 which describes a state model and state
18 machine to create the multi-method sales pipeline referred to in Brodersen at
19 ¶¶0059-60. The errors codes on p.6 of Brodersen are simply SQL error codes for
20 a database and refer to operation of the multi-method sales pipeline (*Brodersen*,
21 ¶0072). Again, the state model and state machine in Brodersen is to develop a
22 business application that is derived from supplied base classes, functions,
23 subroutines, and the like. There is no discussion of testing a software application
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1 with the test sequence of inputs that are generated from a model of the software
2 application, as recited in claim 1.

3 Brodersen also does not show or disclose “a graph traversal program to
4 generate a test sequence of inputs for the software application”, as recited in
5 claim 1. The Office rejects this feature (which was claim 9, now canceled and
6 incorporated into claim 1) based on the rejection of claim 8 (*Office Action* p.4).
7 However, this feature is not recited in claim 8 and there is no mention in
8 Brodersen of a graph traversal program to generate a test sequence of inputs for a
9 software application, as recited in claim 1. Applicant respectfully submits that a
10 *prima facie* rejection has not been provided. The Office merely cites sections of
11 Brodersen without any indication as to which features or aspects of Brodersen
12 might be construed as a basis for the rejection.

13 Accordingly, claim 1 is allowable over Brodersen for at least these several
14 reasons, and Applicant respectfully requests that the §102 rejection be withdrawn.

15
16 Claims 2-8 and 10 are allowable by virtue of their dependency upon
17 claim 1. Additionally, some or all of claims 2-8 and 10 are allowable over
18 Brodersen for independent reasons. For example:

19 Claim 8 recites “a graph traversal menu to enable a user to select the graph
20 traversal program and generate the test sequence of inputs for the software
21 application.” Brodersen does not show or disclose a graph traversal menu or any
22 test sequence of inputs for a software application, as recited in claim 8. The
23 Office relies on Brodersen at ¶¶0013-15 and states that the “cycles, flows, steps,
24 and states provides for graph traversal programs” (*Office Action* p.3). Applicant
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1 disagrees because the cycles, flows, steps, and states refer to actions that are
2 business and industrial specific. Further, the Office is again relying on
3 Applicant's disclosure to modify Brodersen in an effort to reject the present
4 application.

5 The Office also relies on Brodersen Fig. 3 for a state model label, "State
6 Model Transitions", that menus are provided via "Transitions", and for drop down
7 boxes on the state model. There is no indication in Brodersen that any of these
8 labels or drop down boxes can be relied upon to reject "a graph traversal menu to
9 enable a user to select a graph traversal program and generate a test sequence of
10 inputs for the software application", as recited in claim 8. Accordingly, claim 8 is
11 allowable over Brodersen and the §102 rejection should be withdrawn.

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13 Claim 10 recites "a test execution menu to enable a user to select the test
14 driver and initiate the test of the software application". As described above in the
15 response to the rejection of claim 1, Brodersen does not show or disclose any such
16 test features. The Office rejects claim 10 based on the rejection of claim 8.
17 However, claim 10 recites features that are not included in claim 8 and there is no
18 mention in Brodersen of a test execution menu or of a test driver to initiate a test
19 of the software application, as recited in claim 10.

20 Applicant respectfully submits that a *prima facie* rejection of claims 10 has
21 not been provided. The Office merely cites sections of Brodersen without any
22 indication as to which features or aspects of Brodersen might be construed to
23 reject claim 10. Accordingly, claim 10 is allowable over Brodersen and the §102
24 rejection should be withdrawn.
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2 Independent Claims 12, 28, 33, 42, and 49 recite one or more features to
3 define a model of a software application, generate test inputs from the model, and
4 apply the test inputs to the software application to test the software application.
5 As described above in the response to the rejection of claim 1, there is no
6 indication in Brodersen that a model of a software application is defined, that test
7 inputs are generated from the model of the software application, or that the test
8 inputs are applied to the software application to test the software application.
9 Brodersen only describes that a method or business procedure is tested – not that a
10 software application is tested.

11 Accordingly, claims 12, 28, 33, 42, and 49 are allowable over Brodersen
12 and Applicant respectfully requests that the §102 rejection be withdrawn.
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14 Claims 13-27 are allowable by virtue of their dependency upon claim 12
15 (either directly or indirectly); Claims 29-30 are allowable by virtue of their
16 dependency upon claim 28 (either directly or indirectly); Claims 34-37 are
17 allowable by virtue of their dependency upon claim 33 (either directly or
18 indirectly); Claims 43-48 are allowable by virtue of their dependency upon claim
19 42; and Claims 50-52 and 55 are allowable by virtue of their dependency upon
20 claim 49.
21

22 Independent Claims 56, 65, and 67 recite methods comprising “generating a
23 model of a software application from the state information and the transition
24 information”, and “generating a test sequence of inputs for the software
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1 application from the model of the software application” (claim 56); “presenting a
2 user interface that facilitates user entry of state information and transition
3 information about a software application to be tested”, “a graph traversal program
4 that generates a test sequence of inputs for the software application”, and “a test
5 driver program that executes a test sequence of inputs on the software application”
6 (claim 65); and “generating a test sequence of inputs for the software application
7 with a graph traversal program”, and “executing the test sequence of inputs on the
8 software application” (claim 67).

9 As described above in the response to the rejection of claim 1, there is no
10 indication in Brodersen of testing a software application and Brodersen does not
11 show or disclose a user interface for a software application to be tested, a graph
12 traversal program that generates a test sequence of inputs for the software
13 application, or a test driver program that executes the test sequence of inputs.

14 Accordingly, claims 56, 65, and 67 are allowable over Brodersen and
15 Applicant respectfully requests that the §102 rejection be withdrawn.

16
17 Claims 57-64 are allowable by virtue of their dependency upon claim 56;
18 Claim 66 is allowable by virtue of its dependency upon claim 65; and Claims
19 68-69 are allowable by virtue of their dependency upon claim 67.

20
21 Claim 70 recites a computer-readable medium comprising computer
22 executable instructions that, when executed, direct a computing system to generate
23 a test sequence of inputs for a software application to be tested with a graph
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1 traversal program and "execute the test sequence of inputs on the software
2 application".

3 As described above in the response to the rejection of claim 1, there is no
4 indication in Brodersen of testing a software application and Brodersen does not
5 show or disclose a test sequence of inputs for a software application to be tested
6 with a graph traversal program, or to "execute a test sequence of inputs on the
7 software application", as recited in claim 70.

8 Accordingly, claim 70 is allowable over Brodersen and the §102 rejection
9 should be withdrawn.

10
11 **Conclusion**

12 Pending claims 1-8, 10, 12-30, 33-37, 42-52, and 55-70 are in condition for
13 allowance. Applicant respectfully requests reconsideration and issuance of the
14 subject application. If any issues remain that preclude issuance of this application,
15 the Examiner is urged to contact the undersigned attorney before issuing a
16 subsequent Action.

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18 Respectfully Submitted,

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